

Remarks

Claims 1-38 are pending in the application and stand rejected. Applicants gratefully acknowledge the Examiner's withdrawal of the previous rejections. By the above amendment, claim 7 has been amended. Applicants respectfully request reconsideration of the claim objections and rejections based on the above amendments and following remarks.

Claim Objections

Claim 7 was objected to for lack of antecedent basis. Claim 7 has been amended to remove the term "at least one". Accordingly, withdrawal of the objection is requested.

Claim Rejections 35 U.S.C. § 102

The following anticipation rejections were asserted in the Office Action:

- (i) Claims 1, 2, 3, and 9 are rejected as being anticipated by U.S. Patent No. 6,906,677 to Yamamoto et al.; and
- (ii) Claims 1-3, 7-17, 20 and 22-38 are rejected as being anticipated by U.S. Patent No. 6,639,299 to Aoki, et. al.

Applicants respectfully traverse the rejections.

At the very least, Yamamoto does not anticipate claim 1 for at least the reason that Yamamoto does not disclose or suggest an *antenna comprising a conductive via stub formed in the substrate, wherein the conductive via stub is a radiating element*, as essentially recited in claim 1.

The Examiner relies on FIGs. 11-14 of Yamamoto, contending that Yamamoto teaches an antenna comprising a substrate (31) and conductive via stub (13) formed in the substrate, where the "conductive via stub" (13) is a radiating element. Arguably, the Examiner is correct in

that Yamamoto discloses a substrate (31) with a radiating element (13). However, it is respectfully submitted that the radiating element (13) is not a radiating conductive via stub formed in the substrate (31), as contemplated by the claimed inventions.

Indeed, Yamamoto expressly teaches that the radiating element (13) is the end portion of a conductive wire extending from the internal conductor of a coaxial power supply part (12), which is inserted into a through hole formed in the substrate (31) (see, Col. 16, lines 60 ~ Col. 17, line 8). It is fundamentally clear that the inner conductive wire of a coaxial cable is not, and cannot reasonably be construed as, a conductive via stub formed in a substrate within the context of the claimed inventions. Therefore, Yamamoto clearly does not anticipate claim 1, much less claims 2, 3 and 9 at least by virtue of their dependence from claim 1.

Moreover, Aoki is legally deficient to establish a prima facie case of anticipation at least with respect to claims 1, 12, 26 and 34. Indeed, at the very least, Aoki does not disclose or suggest and *antenna (or a method of forming an antenna) comprising a conductive via stub formed in the substrate, wherein the conductive via stub is a radiating element*, as essentially recited in claims 1; 12, 26 or 34

The Examiner relies on FIGs. 1-9 of Aoki, contending that Aoki discloses at least one radiating element (inverted F-shaped antenna) comprising a conductive via stub (i.e., posts 6A) formed in a substrate (7). Although the “posts 6A” may arguably be conductive stubs, it is respectfully submitted that the *posts 6A* are not a *conductive via stub that is a radiating element*, as contemplated by the claimed inventions.

Indeed, Aoki teaches that the radiating element of the antenna is the planar metallic element (8), and as depicted in FIG. 2, the posts (6A) are merely shorting posts that are used to couple (short) the planar radiator (8) to a ground plane (5-1). In particular, Aoki expressly teaches that the upper conductive layer (8) functions as the antenna (see, Col. 4, lines 55-65; Col.

6, lines 60-65) and that the resonance frequency of the planar radiator (8) is determined, in part, by the pattern size of the upper conductor (8), dielectric constant of the substrate, etc. (see, Col. 7, lines 34-43). In this regard, Aoki does not teach or suggest that the posts 6A are radiating elements of the antenna. The posts 6A may be elements forming a PIFA (planar inverted F antenna), but the posts 6A clearly are not radiating elements, as contemplated by the claimed inventions.

Therefore, Aoki clearly does not anticipate claims 1, 12, 26 or 34, much less claims 2-3, 7-11, 13-17, 20 and 22-25, 27-33 and 35-38 at least by virtue of their dependence from respective base claims 1, 12, 26 or 34. Accordingly, withdrawal of the anticipation rejections is requested.

Claim Rejections 35 U.S.C. § 103

Claims 4, 5, 18 and 19 are rejected as being unpatentable over Aoki. Claims 6 and 21 are rejected as being unpatentable over Aoki in view of the ARRL antenna handbook. Applicants respectfully assert that the obviousness rejections are invalid at the very least due to the misplaced reliance on the teachings of Aoki as applied to base claims 1 and 12. Indeed, none of the cited references singularly or in combination teach or suggest *an antenna having a conductive via stub that is a radiating element*. Therefore, withdrawal of the obviousness rejections is requested.

Respectfully submitted,



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